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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,604	03/29/2004	Pierattilio Di Gregorio	6023-175US (BX2592M)	2819

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EXAMINER

BUTLER, PATRICK

ART UNIT	PAPER NUMBER
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1732

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/811,604

Applicant(s)

GREGORIO, PIERATTILIO DI

Examiner

Patrick Butler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benson et al (5,107,649) in view of Hunter (5,792,539), Späth (6,189,354) and the applicant's own admission (specification, page 1, paragraph 0005).

With regard to claim 1, Benson et al disclose a known procedure for producing a planar thermo-insulating vacuum panel (evacuating the panel) (column 4, line 40-52) comprising an envelope (having two facing barrier sheets sealed at their edges) (figure 15, number 82) and containing at least one filler selected from the group consisting of inorganic powders (discontinuous filling material) and porous organic foams (porous filling material) (column 16, lines 25-29). Benson et al further disclose that the panel can be curved into a cylinder (column 9, lines 22-26 and Figure 18).

Benson et al disclose using at least one filler selected from the group consisting of inorganic powders and porous organic foams (column 16, lines 25-29), but do not expressly disclose that the powders and foams are included inside the vacuum envelope. Hunter teaches a bendable vacuum panel (evacuating the panel) (column 8, lines 57-67), which contains at least one filler selected from the group consisting of inorganic powders and porous organic foams (column 9, lines 21-29). At the time of the

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invention, it would have been obvious to a person of ordinary skill in the art to include a powder or foam as taught by Hunter in the panel taught by Benson et al. The motivation to do so would have been to increase the R-value. The R-value would be increased by the including of powder or foam because foam has multiple gas pockets trapping air, and Hunter recognized that stationary air inhibits heat transfer in (see col. 6, lines 40-43). Thus, the filling material would fill the envelope formed by the facing sheets, and as the filling material is between the sheets, it would space the facing sheets at least to the extent that the sheets were separated.

Benson et al do not disclose the method by which the panel is curved, but do disclose that the panel may comprise metal sheets, (see column 4, line 8-17) and that the sheets may be bent (column 6, lines 48-54). Attention is drawn to Späth, which discloses a method for curving hollow metal sheets (column 1, lines 6-8) through calendaring by using two rollers and a third element (a roller) of equal length placed parallel to the two rollers, (see Figure 1). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to curve the panels taught by Benson et al using the method taught by Späth. The motivation to do so would have been to produce a curved hollow metal sheet so that the hollow section is protected against bulges, nicks or against any other kind of deformation (Späth, column 1, lines 15-18).

Benson et al do not expressly disclose that the vacuum panel comprises at least one metal sheet having a thickness not greater than 100 μm . Applicant's admission discloses that envelopes made of barrier sheets of thickness generally not greater than

100 μm are known in the art (specification, page 1, paragraph 005). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to assemble and curve a vacuum panel as taught by Benson et al in view of Späth et al having a barrier sheet of less than 100 μm thickness. The motivation to do so would have been to create a high-performance insulation material occupying less volume that is therefore more valuable (Benson et al, column 12, lines 12-14).

With regard to claim 2, Späth teaches the calendaring operation is carried out by passing the planar vacuum panel between at least two rollers and a third element of length equal at least to a length of the two rollers and having a position parallel to the two rollers (Figure 1, number 27).

With regard to claim 3, Späth teaches the third element is a third roller (Figure 1, number 27).

With regard to claim 4, Benson et al teach the thickness of the vacuum panel may be 2.5 mm thick (column 11, lines 49-55), which is less than the claimed 20 mm. Hunter teaches that the filling material may be rigid polyurethane foam (column 9, line 24),

With regard to claim 7, Späth also discloses a method for curving metal panels through calendaring by using two rollers and a third element of equal length placed parallel to the two rollers where the position of the third element (a roller) is continuously modified during the calendaring operation, (column 8, lines 62-67).

With regard to claim 12, Benson et al teach that the vacuum panel contains at least one getter material (column 4, lines 51-52).

With regard to claim 13, the applicant's specification teaches that it is known to produce a vacuum panel using a multilayer barrier sheet having at least one metal layer (specification, paragraph 0005). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to form the vacuum panel taught by Benson et al using a barrier sheet which is a multilayer sheet having at least one metal layer. The motivation to do so would have been to confer a barrier effect and mechanical support and protection of the barrier layer (specification, paragraph 0005).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benson et al (5,107,649) in view of Hunter (5,792,539), Späth (6,189,354), the applicant's own admission (specification, page 1, paragraph 0005) and Nishimoto (6,336,693).

With regard to claim 5, the teachings of Benson et al in view of Hunter, Späth, and the applicant's own admission teach the invention of claim 4 as discussed above but do not expressly teach the vacuum panel is between 5 and 20 mm. Nishimoto discloses that it is known to construct vacuum panels using hard polyurethane foam having a thickness in a range of 10 to 20 mm (see column 3, lines 47-58). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to increase the thickness of the panel taught by Benson et al in view of Hunter, Späth, and the applicant's own admission to between 5 and 20 mm as taught by Nishimoto. The motivation to do so would have been to increase the insulating properties of the panel.

With regard to claim 6, Benson et al in view of Hunter, Späth, and the applicant's own admission teach the invention of claim 1 as discussed above and that the filler may

be silica powder (column 9, lines 26-28) but do not expressly teach the vacuum panel is between 5 and 20 mm. Nishimoto discloses that it is known to construct vacuum panels having a thickness in a range of 10 to 20 mm (see column 3, lines 47-58). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to increase the thickness of the panel taught by Benson et al in view of Hunter, Späth, and the applicant's own admission to between 5 and 20 mm as taught by Nishimoto. The motivation to do so would have been to increase the insulating properties of the panel.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benson et al (5,107,649) in view of Hunter (5,792,539), Späth (6,189,354), the applicant's own admission (specification, page 1, paragraph 0005), and Haase (4,011,357).

With regard to claim 8, Benson et al in view of Hunter, Späth, and the applicant's own admission teach the invention of claim 1 as discussed above. Furthermore, Benson et al also teach that spacer beads coated with a polystyrene or similar adhesive material are to be affixed to the wall sheets of the planar vacuum panel, (column 7, lines 9-14), thus necessarily creating at least a layer of polymeric adhesive on at least one face of the panel. Benson teaches that the panel is subsequently bent, (column 7, lines 2-8). Benson et al does not expressly teach that the polystyrene layer is in a foam state. Haase discloses that polystyrene can be foamed (column 2, lines 47-56). Therefore, it can be reasoned that foamed polystyrene would be a similar adhesive material to polystyrene as disclosed by Benson. Furthermore, Benson recognizes that polystyrene has desirable insulating properties (column 7, lines 34-40) and the use of foamed polystyrene as adhesive would enhance the insulating properties of the vacuum

panel as a whole. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have placed adhesive polymeric foam on at least one face of a vacuum panel and to have curved the panel through calendaring for the reasons discussed above.

Response to Arguments

Applicant's arguments filed 22 November 2006 have been fully considered but they are not persuasive. The Declaration under 37 CFR 1.132 filed 07 August 2006 is insufficient to overcome the rejections of claims 1-8, 12, and 13 based upon the 35 U.S.C. 103(a) rejections as set forth above. The reasons for insufficiency are detailed in the Office Action mailed 23 August 2006.

Applicant argues with respect to the 35 USC § 103(a) rejections. Applicant's arguments appear to be on the grounds that:

1) Applicant disagrees with the Examiner's conclusion that the declaration under 37 CFR § 1.132 filed 07 August 2006 is insufficient to overcome the rejections of claims 1-8, 12, and 13 based upon the 35 U.S.C. § 103(a) rejections of record. The disagreement is on the following grounds:

1a) The Examiner refers to the Declaration as "Affidavit" rather than "Declaration."

1b) Contending that the showing of the Declaration is not commensurate in scope with the claims is incorrect and irrelevant since "[t]here was no attempt to submit data, comparative results or the like."

1c) Contending that the showing of the Declaration is not commensurate in scope with the claims is incorrect and irrelevant since “the presently claimed invention” or “the invention” was referred to, such as in paragraphs 6, 11, 15, 19, 20, and 26.

1d) It is improper to refer to the Declaration as opinion rather than factual evidence because, while the Declaration “has admittedly not presented any data or experimental results,” this does not make the Declaration any less factual given the vacuum panel business experience, association with trade organizations and associations, educational background, and training of Mr. Manini.

1e) An example of the Examiner’s error in analysis is concluding that Hunter does not require evacuation, since it is clearly mentioned, in some aspect, at least 6 times.

1f) An example of the Examiner’s error in analysis is contending that no factual evidence has been made to show that the sheet of Benson would fail below Benson’s minimum thickness of 0.2 mm (see col. 11, lines 53-54). Benson has already considered having the thickness sufficient to be rigid enough not to fail (see col. 6, lines 52-53). Since the claimed thickness, 0.1 mm, would be half the minimum of Benson, common sense would indicate that Benson would fail at that thickness.

1g) An example of the Examiner’s error in analysis is contending that foam can be incorporated into Benson’s structure. This would teach away from Benson since Benson does not indicate that it would have good results.

The Applicant’s arguments are addressed as follows:

1a) Although the Examiner interchangeably refers to "Affidavit" and "Declaration," since the statement included proper warning consequences of willful false statements and did not indicate being under oath before an authorized officer, the statement is a Declaration (see MPEP § 604 and 37 CFR § 1.68).

1b, 1d, and 1f) Since the Declaration does not contain an indication of an event, act, or occurrence that has actually taken place, the Declaration, in general, is accorded opinion evidence status as it is, at best, a statement expressing what the person making it thinks, believes, or infers with regard to certain facts.

1c) Referring to "claimed invention" for features in the independent claim is relevant to the present situation. However, for situations such as referenced Declaration paragraphs 15, 19, and 20, it is not clear that claimed features are being discussed. Specifically, the performance discussion of pressure difference of about 1 atmosphere, the discussion either pertains to a feature that is not claimed or pertains to a feature which the art relied upon in the 35 USC § 103 rejection above would necessarily teach given that it contains the same materials and steps as described in the 35 USC § 103 rejection above.

1d) The absence of factual support for the opinion makes it difficult to accord the opinion significant weight in overcoming the rejection.

1e) To clarify, the Examiner does find that Hunter requires complete evacuation. The Examiner acknowledges that Hunter teaches evacuation. However, Hunter is relied upon for all that it teaches. Evacuation is explicitly optional. Thus, Hunter does not require evacuation (see col. 6, lines 35-37).

Moreover, total evacuation is not taught given the practical aspect of actually achieving total evacuation. Even if evacuation is done, it does not have to be total evacuation. For instance, Hunter teaches low and high vacuum (see col. 6, lines 54 and 55).

1f) Benson does not require 0.2 mm since Benson teaches that the minimum is optional—"for purposes of illustration" and "can be" (see col. 11, lines 49-55).

1g) Specific citations of extended periods of time and high-temperature exposures only indicate, at the most, specific situations where foam would not be optimal (see Benson, col. 2, line 54 through col. 3, line 10). Thus, relying on Benson for all that it teaches, the specific uses of the panels impacts their performance, which is beyond the scope of the claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mo.-Th. 7:30 a.m. - 5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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2/10/07